

REMARKS

Claim 1 is amended by replacing “a particle comprising a fluoropolymer” with “a fluoropolymer particle”. Claim 1 is further amended by incorporating the subject matter of claim 8. Claim 8 is canceled.

Claim 9 is amended by incorporating the subject matter of claim 11. Claim 11 is canceled.

Claims 14 and 15 are amended by deleting “molding” in the claims.

Support for the claim amendments is found, for example, in the claims as originally filed.

I. Response to Claim Objections

Claims 1-15 are objected to because the recitation, “dispersion which comprises a particle comprising a fluoropolymer” is said to be awkward.

Claim 14-15 are further objected to because of the recitation “molding/processing”, which the Examiner states is unclear.

As noted above, claim 1 is amended by replacing “a particle comprising a fluoropolymer” with “a fluoropolymer particle” and claims 14 and 15 are amended by deleting “molding”, thereby obviating the objections to the claims.

Accordingly, Applicants respectfully request withdrawal of the objection to the claims.

II. Response to Claim Rejection under 35 U.S.C. § 102

Claims 1, 4 and 5 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by JP 06-065337 (hereinafter JP ‘337).

Applicants traverse the rejection.

Without conceding the merits of the rejection, claim 1 is amended herein as noted above.

The fluoropolymer aqueous dispersion of amended claim 1 has a fluoropolymer solid

anionic surfactant content of not higher than 100 ppm and a ratio (A^1/A^0) of not lower than 0.4. JP '337 does not disclose, teach or suggest these features of the claimed invention. For at least this reason the amended claims are not anticipated.

A fluoropolymer aqueous dispersion having a fluoropolymer solid matter content of 20 to 80% and low content of a fluorine-containing anionic surfactant can be obtained by a concentration operation. The aqueous dispersion obtained by such a concentration operation shows an extremely high viscosity-temperature dependency when the fluorine-containing anionic surfactant concentration in the above-mentioned supernatant for assaying prepared therefrom becomes 100 ppm or lower.

However, as described at page of the present specification, the supernatant for assaying as obtained from the fluoropolymer aqueous dispersion of the invention has a ratio (A^1/A^0) of not lower than 0.4 and contains nonionic compound molecules (S^H) which lower the viscosity-temperature dependency of the fluoropolymer aqueous dispersion. The fluoropolymer aqueous dispersion before the preparation of such supernatant for assaying is low in viscosity-temperature dependency. (S^H is described at page 18, line 31 of the specification.)

In the Action dated October 3, 2008, the Examiner states that the viscosity-temperature dependency reduction is dependent on the supernatant separated from the fluoropolymer. However, the working examples in the present specification show that the fluoropolymer aqueous dispersion has excellent viscosity-temperature dependency when the ratio A^1/A^0 of the supernatant separated from the fluoropolymer is not less than 0.4. Therefore, the effect of the present invention is clear. (The analyses of anionic and nonionic surfactants are often conducted after removing the polymer solid. For example, Hoshikawa determined an APFC concentration by such a method. See column 6, lines 44 to 64 of U.S. patent No. 7,141,620.) On the other

hand, JP '337 does not disclose, teach or suggest the ratio (A^1/A^0) and fails to recognize its significance, namely, that the viscosity-temperature dependency is a function of the ratio (A^1/A^0).

Also, the dispersion of JP '337 is obtained by a different method. Thus, JP '337 does not disclose a fluoropolymer aqueous dispersion having a fluoropolymer solid matter content of 20 to 80%, wherein the supernatant for assaying has a ratio (A^1/A^0) of not lower than 0.4. Therefore, for this additional reason, the fluoropolymer aqueous dispersion of amended claim 1 is novel and unobvious over JP '337.

Accordingly, Applicants respectfully request withdrawal of the §102 anticipation rejection based on JP '337.

III. Response to Claim Rejections under 35 U.S.C. § 103(a)

A. JP '337

Claims 2, 6 and 8-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '337.

Applicants traverse the rejection.

JP '337 does not disclose teach or suggest the fluoropolymer aqueous dispersion of amended claim 1 having a fluoropolymer solid matter content of 20 to 80%, wherein the supernatant for assaying has a fluorine-containing anionic surfactant content of not higher than 100 ppm and a ratio (A^1/A^0) of not lower than 0.4 as recited in present claim 1, for the reasons set forth above. Claims 2, 6 and 8-10 depend from claim 1 and are patentable for at least the same reasons.

Accordingly, Applicants respectfully request withdrawal of the §103 obviousness rejection based on JP '337.

Accordingly, Applicants respectfully request withdrawal of the §103 obviousness rejection based on JP '337.

B. JP '337 in view of Hoshikawa

Claims 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '337 in view of Hoshikawa et al (U.S. Pat. No. 7,141,620).

Applicants traverse the rejection.

The method of amended claim 9 comprises carrying out a concentration operation at least twice to obtain a pretreatment fluoropolymer aqueous dispersion containing a nonionic surfactant (A), and adding a nonionic surfactant (B) to the pretreatment fluoropolymer aqueous dispersion. Moreover, the supernatant for assaying as obtained by subjecting the pretreatment fluoropolymer aqueous dispersion to 30 minutes of centrifugation at 25°C and at a gravitational acceleration of 1677G has a fluorine-containing anionic surfactant content of not higher than 100 ppm. Furthermore, the nonionic surfactant (A) has an HLB of 12 to 14 and the nonionic surfactant (B) has an HLB of 13 to 15.

As described in the paragraph at pages 19-20 of the specification, the concentration operation generally comprises a separation step of separating into a concentrated phase containing fluoropolymer particles and a supernatant phase comprising water and which is substantially free of fluoropolymer particles. The inventors found that, in the separation step, high-HLB nonionic compound molecules high in hydrophilicity, out of the nonionic compound molecules constituting the nonionic compound, migrate selectively into the supernatant phase and are removed in the step of removing the supernatant phase. As a result, the nonionic compound molecules remaining in the concentrated phase have a low HLB value. The aqueous dispersion prepared from this concentrated phase by appropriate dilution, for instance, shows an

surfactant concentration in the above-mentioned supernatant for assaying as prepared therefrom becomes 100 ppm or lower.

The method of amended claim 9 comprises adding a nonionic surfactant (B) to the pretreatment fluoropolymer aqueous dispersion and, therefore, can produce the fluoropolymer aqueous dispersion of amended claim 1 of low viscosity-temperature dependency.

JP ‘337 does not disclose carrying out a concentration operation at least twice to obtain a pretreatment fluoropolymer aqueous dispersion containing a nonionic surfactant (A) and adding a nonionic surfactant (B) to the pretreatment fluoropolymer aqueous dispersion.

Hoshikawa (USP 7,141,620) fails to remedy the deficiencies of JP ‘337. Hoshikawa discloses that the concentration step may be repeated two or more times. (Column 5, lines 43-44). However, Hoshikawa does not disclose carrying out a concentration operation at least twice to obtain a pretreatment fluoropolymer aqueous dispersion containing a nonionic surfactant (A).

Therefore, the method of amended claim 9 is not obvious even if JP ‘337 and Hoshikawa are combined.

Accordingly, Applicants respectfully request withdrawal of the §103 obviousness rejection based on JP ‘337 and Hoshikawa.

C. Dougherty, Jr., et al in view of JP ‘337

Claims 1, 3, 7 and 13-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dougherty, Jr., et al in view of JP ‘337.

Applicants traverse the rejection.

Dougherty does not disclose the claimed dispersion. Dougherty does not disclose, teach or suggest the fluoropolymer aqueous dispersion of amended claim 1 having a fluoropolymer solid matter content of 20 to 80%, wherein the supernatant for assaying has a fluorine-containing

anionic surfactant content of not higher than 100 ppm and a ratio (A^1/A^0) of not lower than 0.4. Further, Dougherty does not disclose carrying out the concentration operation and adding nonionic surfactants. JP '337 fails to remedy the deficiencies of Dougherty for the reasons set forth above. Therefore, the fluoropolymer aqueous dispersion of amended claim 1 is novel and unobvious over the combination of Dougherty and JP '337.

Accordingly, Applicants respectfully request withdrawal of the §103 obviousness rejection based on Dougherty and JP '337.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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